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PSYCHOLOGY AND SCIENTIFIC METHODS

THE NATURE OF CONSCIOUSNESS. III

IN the two preceding articles it has been shown that the image, or sensuous fact in perception, is a psychic existence, and that it is the medium of cognition, that is, the part of the mind concerned in cognizing. In other words, proof has been given of the existence of "consciousness" in the sense in which it means *feeling*. We pass now to the second branch of our subject, "consciousness" in the sense of *awareness*. The question is, How does the image enable us to cognize or be aware? What is awareness, and what does it involve?

II. THE MECHANISM OF AWARENESS

Awareness may be defined as the mere experiencing or thinking of a thing, apart from any thought *about* it. It is bare "knowledge of acquaintance," perceptual and conceptual. It is the function by which the mind *has to do with* an object, has an object before or *present to* it—"presentation."

Thus it is necessary to conceive awareness in such a way as, on the one hand, to include thinking *of* absent things, or representation, and, on the other hand, to exclude thinking *about* things, *i. e.*, interpretation, or "thought" in the proper sense. Of course we can think *about* some things only by thinking *of* others, and, in so far, awareness enters even into thinking-about.

In conceiving representation we must beware of falling into the fallacy of representativism, referred to in a previous article. Though in sense-perception our awareness of the object is obviously direct, we are apt to suppose that in memory, for instance, this is not the case, but that what we are immediately aware of is a mental image or duplicate of the object, which only stands for it. This, however, is an error. Memory has as directly to do with its object as presentation proper. The mental image, which is undeniably necessary, is not the object of the awareness, but its vehicle or medium—the part of the mind concerned in remembering; and from

this the relation of knowing goes straight to the remembered fact itself. *What is copied or duplicated in memory is not the object, but the knowing activity—representation is re-presentation, presentation in fainter form in the absence of the object that originally evoked the cognition.*

Representation is evidently derivative from presentation proper—we never should think of things in their absence if we had not experienced their presence. Awareness of a present object is perhaps best called *cognition*. Of this there are two forms: sense-perception and introspection. Cognition, or, to call it by its epistemological name, experience, is the function in which knowledge (knowledge of facts at least) is acquired—in the one case knowledge of physical facts, in the other case knowledge of feelings.

Of the two forms of cognition, introspection is at present far the less clear to us, since we do not at all know what is the medium of the awareness; whereas, in the case of sense-perception, we know that it is the image. We had better, therefore, content ourselves here with analyzing awareness as exemplified in sense-perception.

On the threshold a difficulty meets us. All actual sense-perception is a compound of cognition with “thought”—that is, with interpretation by means of representations (or at least by means of habits that past experience has left behind). To get awareness in the pure state, we must separate this thought-element out; and this can be done only by an ideal abstraction. Moreover, a school of philosophers exists who define awareness as thinking-about—this may be called *the post-Kantian definition of awareness*—and we must settle our scores with them before we can proceed.

According to these philosophers, sense-experience without thought would be mere sensation, not knowing. We are aware of a thing only so far as we conceive it; in other words, only awareness of a thing *as being this or that* is allowed to be awareness. Thus, to be aware of a color, *e. g.*, red, it is not sufficient to see it, but you must think of it as different from green and blue, or as called red, or as in a certain place; without which it would be “nothing for us as thinking beings.” This is cruel to the lower animals, who presumably are without the power of thought, yet who look at things and act very much as if they were aware of them. The bird who eyes me from his cage is in a true sense aware of me, even though he can not think. Might not things be “nothing for us as thinking beings,” and yet something for us as percipient beings?

The post-Kantian view finds expression in the current formula that “all knowing is judgment.” What this really means is that no knowing is simple apprehension or cognition. It follows as a conse-

quence from the post-Kantian denial of things in themselves, since without an independent object there is nothing to be cognized, and hence no such function as cognition. We, conversely, who recognize an independent object, must also recognize a function of cognition or awareness distinct from thought.

No sane person would underrate the immense importance of thought. Without it not only would there be no such thing as science, but we should not even be able to profit by our experiences or to carry anything away from them; so that, in so far as experience means a learning and not simply a momentary awareness, thought is indeed essential to its possibility. Without thought sense-perception would be a mere dumb staring at the subject, with, no doubt, correct instinctive responses to it, but without any accession of wisdom.

This admitted, we must insist with firmness that thought is a superstructure erected upon perception, and that perception is independent of it and does not necessarily involve any admixture of thought. When Kant says that sense and thought are both necessary to experience, his "sense" is not mere sensation, but sensory awareness, cognition. We must be aware of an object before we can relate it to other things according to the categories. Cognition is prior to thought both epistemologically and logically.

Logicians recognize this when they distinguish simple apprehension from judgment and make it something which judgment presupposes. How, indeed, could we think *about* a thing unless we first thought *of* or perceived it? The attempt to explain perception by thinking-about is a hysteron-proteron, completely reversing the true relations of cognition and thought.

Thinking about a thing perceived must take place by means of representations additional to the image that conveys the thing. But these representations are themselves presentations of other things; we must apprehend the predicate, as well as apprehend the subject, before we can judge. Presentation, then, can not be explained by means of judgment, but judgment must be explained by means of presentation.

In these observations my assumption has been that the "judgment" referred to is an *explicit* one—the "thought" an actual element of consciousness distinct from images (or possibly fused with them). If the judgment meant is only implicit, I answer that an implicit judgment is no actual judgment at all, but only the behaving as if you were prepared to make one. Doubtless in cognizing an object we imply by our conduct the object's existence, but judgment in that sense is quite a different thing from judgment in the sense of predication.

Since, then, epistemologically, "thought" presupposes cognition, and since logically it involves several awarenesses, not only that of the subject, but also that of the predicate and of the relation between them, I think we may safely put this function on one side, even though we have to do so by an abstraction, and analyze awareness as if it were entirely unaccompanied by thought.

What is it for us to be aware of a physical object—wherein consists presentation of it?

We know from the preceding articles that the first requisite is an image. The mere existence of the object, then, is not in itself a being presented, but presentation is a distinct and additional fact, contingent on the rise of an image. On the other hand, the mere presence of the image is not in itself a presentation of the corresponding object. For image and object are distinct facts, and there is nothing in the image considered by itself which points to or announces an object. Introspection reveals no awareness in the image. When we scrutinize the image introspectively, we find it to be simply a form of feeling; and, if there is any awareness present, it is our awareness of it, not its awareness of the object. True, when we scrutinize the image thus we are no longer sense-perceiving, and the image has passed from a subjective to an objective position; but there is no reason to suppose that in this passage it has changed its nature, or that introspection does not show us correctly what it was. It follows that that which makes the image aware, or us aware by means of it, must be sought outside its own being.

But not in another simultaneous element of consciousness. The other element most likely to serve the turn would be "thought"—say, thought of the image as referring to an object—but thought, as we have seen, is simply other awareness, awareness of other objects, and therefore can not be used to explain awareness itself. If, on the other hand, we were tempted to look to a hypothetical centre of consciousness, other than all images and thoughts, a sort of eye of the mind, as the locus of this awareness, the difficulty would be that it could only explain awareness of the image, whereas what we have to explain is awareness of the object. The real eye of the mind, or part of the mind that perceives, is the image itself, and awareness must be a relation passing from it to the object—as we see when we consider that in sense-perception the image is not, so to speak, in the line of vision, or an object of awareness, at all.

Can it be that the relation in which awareness consists falls outside the mind—that awareness is not, strictly speaking, a psychical fact, or property of the mind considered as an existence?

In order to explain the mechanism of awareness, we need two premises, one of them distinctly stated and the other implied in the preceding articles: (1) that the objects of sense-perception are real existences, (2) that these existences are not only in time, but also in space, or in an order symbolized to us by space.

1. We saw that realism follows from the *lateness* of the image. If the object were merely a sort of composite picture formed out of images or a concept of their permanent possibility, we should expect it to be assigned to the same moment of time as the image. It would be impossible to understand the constraint the facts put on us to refer it to an earlier moment—indeed, this peculiarity in the facts would appear an unaccountable anomaly. Whereas, if the object is a real existence, and the image an effect which it calls forth, their temporal relation is the most natural thing in the world.

The reluctance of philosophers to admit that the object causes our perception of it has been due in part to a confusion between the appearance which the object presents in sense-perception, and the image by means of which this appearance is presented. The object does not cause the *appearance*: for the appearance is the object as it appears, and the object can not be causally related to itself even as it appears. What the object causes is the image by means of which it appears; and this, being another existence in the same world with the object, can perfectly well be causally related to it.

The proof of realism I offer, then, is that no other view affords a satisfactory explanation of the temporal gap between object and image. I do not, of course, mean that the idealist can not *state* the facts in terms of his theory—can not say that the object, besides being referred outward, is also (at least as soon as we learn of these peculiar facts) referred backward, and yet, for all that, is purely ideal. No detail of perceptual experience would be different on this hypothesis from what it would be on the hypothesis that the object is real: *in pure logic* the two hypotheses are exactly on a par. But not *in science*. The realistic hypothesis gives an intelligible explanation of the time-gap, the idealistic hypothesis gives none. Not only so, but the latter makes such an explanation, quite plainly, forever impossible. Now we may admit for argument's sake that the time-gap *might* conceivably be an ultimate fact, which we must accept without explanation; but, in science and philosophy, it is a legitimate ground for preferring an hypothesis that it absorbs anomalous facts and brings them into intelligible connection with others, and the simplest hypothesis that systematizes all the facts is considered true.

Idealists might with a better grace point to the logical purity and adequacy of their doctrine if they would apply it consistently all

round—for instance, to memory, expectation, and knowledge of other minds. Is there any idealistic reader who is prepared to deny, quite generally, that things can exist independently of our minds and yet be known?

A more colorable objection to independent things in sense-perception is the difficulty of assigning to them a nature. Idealists maintain that the kind of existence best known to us, indeed the only kind we can really conceive, is psychical. Hence they urge that realism involves dualism. Some idealists even consider that, if real things be assumed beyond our states of mind, the states become unreal by comparison. Either all reality lies beyond us, or none does: such is the only alternative they seem able to conceive.

But if, as we saw, the image is an existence, a portion of reality, there is evidently an intermediate possibility: namely, that what lies beyond us is only *the rest of* reality—in other words, that in cognition reality is, so to speak, bisected, far the greater part of it lying beyond, but not the particular part that cognizes. Here is an hypothesis that would have great advantages, since, in the first place, it does away with dualism. If we consider, secondly, that the image is a psychical fact, we shall see that the other point of the idealists, viz., that the only existence conceivable is psychical, is in a fair way to have justice done it. For, granting that the psychical is the existence best known to us—that is, known most nearly as it is; if it be true, as has been shown, that we know objects only through the medium of images, so that what they are in themselves remains more or less problematic; there is nothing to prevent our supposing that, in themselves, they are of the same nature as images and feelings: especially as these latter appear to have been evolved out of them.

Such panpsychism can not be denied to be an exceedingly economical hypothesis, since at a single stroke it achieves monism both with regard to the arrangement of reality and with regard to its nature. As to the former, note that the bisection in cognition is, so to speak, movable: now it is one image that is on this side the line permitting us to cognize one object, now it is another image permitting us to cognize another object; and, since each image is a part of the world, it is itself an object which in its turn is capable of being cognized through the medium of some other image. Thus there is no part of the world that is not capable of being cognized, in the way in which sense-perception gives us cognition of objects. Add to this that we have introspection, enabling us to cognize in a more intimate way our own images just after they have occurred.

The drawback (if it really be one) of the hypothesis is that it obliges us to some extent to materialize the psychical—to conceive,

on the one hand, that psychical facts are capable of appearing under a physical form, and, on the other hand, that all physical facts are appearances of the psychical.

It is not necessary, however, to the following explanation of awareness to assume that the realities which appear as inanimate objects are psychical in their nature. It is sufficient to assume that they are other existences in the same world with the image.

2. Realistic theories vary greatly in the amount of information they suppose sense-perception to give us about the object—in the degree, that is, in which they consider the object to resemble the form under which it appears to us. Kant's "things in themselves," for instance, are neither in time nor in space, so that everything perception tells us about them (if it can be said to be about them!) is wrong. We are forbidden any such agnostic view of our own real things by the nature of the argument used to prove them. Since this argument was the time-gap, we are committed to conceiving them as at least in time. The object is an existence at an earlier time than that of the brain-event.

If we follow out this line of thought further, we shall see that they must be assumed to be also in space, or in something that appears as space. For the time-gap is greater in proportion as the object is more distant from us; it is greatest of all in the case of such a very distant object as a star. Now, time being real, what is this interval of real time needed for, except precisely to enable the light-rays to traverse the space intervening between the object and us? This space, then, must be as real as the time. That, in itself, it is just like what it appears to be, we need not assume.

A conclusion not essentially different from this may be urged on other grounds. If you deny that space is real, you can not mean to shrink simultaneous reality together into a point, or a distinctionless unity. Room must be found at least for the difference between individual minds; so far as isolated centres or fields of experience exist, and they certainly exist in vast numbers, reality must be plural, it must consist of separate if connected parts. Furthermore, so far as many distinct thoughts and feelings coexist within each centre or field, reality must be still further divided up. Even recognizing only individual minds, then, reality consists of an immense number of simultaneous parts.

But these parts, surely, are not without relation—they form an order. Very great differences exist in the ease with which one part of reality is able to affect, or produce changes in, other parts of reality. For instance, I can excite a feeling in a person at my side by merely touching or speaking to him: whereas to a person across the ocean I must send a cablegram or a letter, which may take days.

We can hardly consider the case without recognizing that there are in reality, so to speak, *paths by which the causal influence finds its way about*. These paths, these relations of nearness and remoteness, nextness and non-nextness with respect to influence, correspond exactly to the spatial relations between perceived things; so that, even if we deny reality to be in space, we shall have to admit a quasi-spatial order of its parts which will not be so very different. If any reader, then, rejects real space, I beg him to substitute for it this quasi-spatial order or these paths of influence: and they will serve equally well as a basis for the explanation of awareness I am going to give.

At the outset, I want to declare in the most explicit way that it does not enter into my plan to question that we *are* aware of the object. I accept awareness as a fact. If any one expects my theory of awareness to deny that awareness is a fact, he will be disappointed.

Let me point out, however, just what this declaration does, and what it does not, involve. On any theory of awareness, that of which we are aware is the object, and the object alone. You can not, without vitiating the logical purity of the object, introduce into the conception of it any taint of subjectivity or flavor of the cognizing process. Logic is the science which tells us how to think with perfect correctness about the things we cognize. And logic must insist that what we cognize is exclusively objects and relations between objects. *Logically*, then, awareness is a function which takes us to the object: awareness can not be recognized at all without admitting self-transcendence in a logical sense.

This, however, must not be taken to mean that the report cognition gives us about the object is necessarily authoritative and final. It only means (1) that sense-perception really reaches the object and brings it before us; (2) that its report deserves confidence so long as it is self-consistent and not contradicted by information derived from other sources. That there are limits to the trustworthiness, or rather to the adequacy, of sense-perception is shown by the existence of "secondary" qualities.

If realism is true, we are in an entirely different position in accounting for awareness from what we should be on the idealistic hypothesis.

1. For, in that case, besides the object and the image there is also *the body*. The body is real, it exists during cognition, it is another object than the one perceived, and an object lying closer to us. Indeed, on our view it surrounds the image—the image is, as it were, at its centre.

2. With the body come also the sense-organs. The image is not merely in a general way an effect of the object, but it is an effect produced through the medium of the sense-organs.

3. Then there is the other side of the matter: the image enables the body, by means of the motor apparatus, to react on or towards the object. It would be a serious omission, in our quest of the secret of awareness, to overlook this motor function of the image, from which we have thus far abstracted. The image would not exist at all if it were not for its rôle of enabling the body to adjust itself to the object.

4. Thus, quite independently of awareness, the image is connected with the object by what we may call *afferent and efferent relations*. We are apt to conceive the problem as if we had simply the image, swinging *in vacuo*, on the one side and the object on the other, and had then to account for the image cognizing the object; but this in reality is an illusion, it involves an abstraction: the image (if we are right that it is in the brain, or even if it is only correlated with a brain-event) is held in position towards the object by a set of definite physical relations. So far from being *in vacuo*, it exists (either as itself located, or through correlation) at a perfectly definite point in the world, next to some things and not next to others, able to be acted on by and to react to the things in its immediate neighborhood and not other things. It is like a gun which, held by a certain person and pointed in a certain direction, must if it goes off hit a certain object.

These things being so, *why need we in accounting for awareness admit any self-transcendence except the logical one?* Why need we assume the undoubted logical self-transcendence to be incarnated in a psychological power, other than feeling, and of the nature of a mysterious intuition?

Two possible conceptions of the psychology of awareness stand opposed to each other.

The one is the popular conception, the conception we all find ourselves possessing as a result of our every-day contact with the facts. On this view, all the color and variety lie in the object, and awareness is a pale, diaphanous something, the mere mental grasp, so to speak, which we have on this color and variety—something which, like a lens, brings the object better before us in proportion as it is itself transparent and invisible. This conception may be called *intuitionism*. A distinctive mark of it is that it makes awareness an ultimate fact (awareness conceived psychologically, I mean—logically awareness is indeed ultimate), incapable of resolution into anything simpler.

The other conception is that to which our whole exposition has been tending, and I would designate it as *projectionism*.¹ This view also puts the color and variety in the object in the double sense (1) that in cognition they appear as qualities of the object, and (2) that they bring before us real characteristics of it, which vary as they vary; but, considered as existences, it puts them in the image or subject, from which it conceives them to be projected much as the beams of a searchlight are projected upon a distant ship—or, to use a more accurate simile, as blue spectacles shed their color upon the object seen through them.

Projectionism differs from intuitionism in assuming nothing ultimate or incapable of analysis. It assumes, in fact, nothing but the afferent causal relations by which the image was called forth, such resemblance or correspondence as actually exists between it and the object, and the efferent causal relations by which adjustment to the object is effected. Self-transcendence it looks upon as purely logical.

Let me try to reply to certain objections that are likely to be felt.

1. It will be said that the existential connections just mentioned in no way account for the cognitive character of the image, or serve to communicate a cognitive character to it. They fall outside its being, are unfelt by it, and, so far as it is concerned, are as good as non-existent. No matter what other things surround it in the world, a non-cognitive feeling remains a non-cognitive feeling still.

Of course it does, I reply; but my contention is precisely that a cognitive state is, in itself considered, a non-cognitive feeling. The critic would be more likely to see in this proposition a correct account of experience if he would not look at the feeling or image abstractly, but consider the *cortège* of other feelings in the midst of which it comes. Actually each image is a brief momentary state, occurring in the midst of others and succeeded by others still; and the different images, besides their merely psychological simultaneity and succession, are related to each other as they must be in view of the fact that they are effects of surrounding objects. All this, it is true, is unknown to the images; nevertheless there is method in the way they come. Again, the images do not merely in fact evoke bodily reactions, but these reactions in their turn contribute feelings, namely, kinesthetic ones, that are likewise in methodic relation to each other and to the images. Finally, these various images and feelings suc-

¹ The sources to which I am indebted for this conception are Professor James's article on "The Function of Cognition," in *Mind* for 1885, pages 27-44, reprinted in his posthumous "Essays in Radical Empiricism," and Professor Miller's article on "The Confusion of Function and Content in Mental Analysis," in *Psychological Review* for 1895.

ceed each other in a train *all the members of which are accessible to memory*; and this accessibility to memory introduces among them a certain unity, in so far as we can at any moment pass in thought from one to any other, by moving backward or forward along the line.

In this I am simply pointing out undeniable facts about the sequence of our feelings—facts that are so, whether the (so to speak) intelligible connection between our feelings is to be found in them, or lies outside them. The possibility therefore exists that the thread on which our feelings (so far as they are cognitive) are strung is an external one; that we never can understand their performances unless we take account of their external relations.

In a word, feelings need not be intelligent in themselves, provided they follow one another in an intelligent order. The functions they discharge will then communicate to our life as a whole as much intelligence as we feel it to possess.

But this, it will be said, at least assumes memory, as a real faculty of contemplating or cognizing feelings. Not at all, I answer; memorial knowing is presumably explicable on just the same principles as perceptive knowing. And introspection is, in my opinion, simply a form of memory.

2. It may be objected that I have not explained how the image, which according to the theory is in the brain, or at least the quality of the image, comes to be found in the object—have not justified, in other words, the metaphor of *projection*.

The reader will recall that in sense-perception, as we saw in an earlier article, our attention, as is shown both by our overt acts and by our sensory accommodations, *is occupied exclusively with the object*. The different colors, shapes, and sizes of images operate in us solely as incitements to different kinds of behavior towards objects. Or, to put it otherwise, that in the image which guides our action and thought is solely what has come through to it of the object: it is only so far as the image has the object's shape rather than a shape of its own, the object's size rather than a size of its own, and so far as its color can be safely treated as the color of the object, that it affects our conduct and thinking at all. But this is to say, almost in so many words, that the image is taken as being where it is not and what it is not—that it is projected into the object.

And this, I believe, is the real truth of the matter; by the unanimous voice of all our reactive tendencies the image is pronounced to be in, if not actually to be, the object.

The projection of the image is, above all, a conferring of depth. This, as we saw, is not, as such, a character of the image. How can an image not possessing depth acquire it? The answer is now plain.

By prompting us to act as if the object, with which alone we have to do, were at a certain point. To direct our action thus, the image must of course itself have certain characters: one image will prompt one movement and therefore show us an object at one distance, another image another; or the same image coming in different settings may have different motor and perceptual effects. It is always the image taken with its motor promptings that explains what we perceive.

Such, then, is projection—a rooted habit of seeing the object in the guise of the image, and yet where the image is not.

This account of awareness touches modern psychology at three points.

1. It rehabilitates the notion of “eccentric projection.” Physiologists, assuming in perhaps too naïve a sense that sensations were in the brain, spoke of a process by which they or their qualities were transferred to objects outside the body. Psychological critics retorted that this was mythology: sensations are not first in the brain, and then moved out; what is in the brain is only their physical concomitants, but the sensible qualities are from the outset discovered in objects; as for the sensations, they are not in any place at all. To criticize the physiologists thus was to take in a literal sense what had been meant in a metaphorical—or, rather, to take in an existential sense what had been meant in a logical. The place where in sense-perception the qualities appear to us to be is in the object; that is true. But the place where they *are*, together with the psychic existences of which they are primarily qualities, we have shown is in the brain. Their escape from the brain and installation in objects can only be explained by a sort of logical or intentional projection: by the fact that from the outset we take them only as signs, and ignore their existence in any other character—just as the practised reader never once thinks of the letters.

The physiologists seem to me to have been entirely in the right. Their conception needs only to be taken in its true logical sense, to furnish the key to the nature of awareness.

2. Modern psychologists have, I think, largely given up belief in a “third conscious element,” and explain will as a complex of feelings and sensations, with or without anticipatory ideas. The older psychology of course recognized, side by side with cognitions and affections, a class of conations, the essence of which was a conscious exercise of power. We now know (*a*) that there are no such things as “feelings of innervation,” accompanying the outgoing nerve-current; (*b*) that all psychic states are dynamic, or tend to produce motor effects, in like degree, and that our feeling of our own activity, so far

as it is something over and above this motor tendency, is due to sensations from muscles, joints, etc., apprizing us that the motor effects have already been produced.

Now will, in the older conception of it, was one of the two instances of the mind's power of self-transcendence, the other being cognition; and the modern theory of will amounts to the denial of any such self-transcendence *as a psychological fact*. It was inevitable that the one instance of psychological self-transcendence remaining should meet with a similar explanation. Projectionism and the modern theory of will agree in principle, and stand or fall together.

3. Another modern theory to which our hypothesis stands in close relation is the "James-Lange" theory of emotion. A little reflection will show that projectionism is simply the application of the essential principle of this theory to cognition. For there are bodily effects characteristic of cognition, just as much as of emotion: *e. g.*, incipient discharges into the muscles expressing the motor tendency of the state in question, continued accommodation of the sense-organs for attending properly, etc. These effects give rise by "return wave" to sensations, which communicate to the cognitive state its special coloring. Hence, just as James could say, by an excusable hyperbole, "We are angry because we clench our fists, we are ashamed because we blush," so the projectionist may maintain that we cognize because we attend and react.

Consider a cat, intent upon a mouse-hole from which certain exciting noises have come. Must we conceive that the cat's *psyche*, so far as expectant of the mouse, is endowed with a miraculous power of self-transcendence, not reducible to images or feelings, and not explicable by evolution? Is it not simpler to say that, when a certain image evokes movements of crouching and watching with the accompanying feelings, the cat *ipso facto* is aware; in short, that she expects the mouse because she crouches and waits for it?

Like emotion, cognition has its origin in instinct. An instinctive act differs from a merely reflex one in that it involves the intervention of consciousness, *i. e.*, of psychic states; for instance, the bird must have certain feelings and see certain objects in order to be prompted to build her nest, the chick must see on the ground a grain-like object in order to be prompted to peek at it, etc. Many such activities take place with entire perfection at birth. This must mean that ready-made nerve-connections pass from the visual centres to the motor tracts, so that on the very first occasion on which the object is seen it produces, not a mere sensation, but a perception. A sensation which automatically incites a reaction to the object that called it

forth, in such wise that there is a virtual judgment of the object's presence, *is* a perception.

In mature beings often no actual reaction is evoked, yet we can not doubt that there has been a perception. This may be because the act was inhibited by other instinctive stimuli operating at the same moment. It would be wrong, obviously, to make an actual reaction necessary to a cognition. What is necessary is rather that the nerve-connections should exist in virtue of which the reaction is possible. And, just as we must thus exclude the efferent causal relations so far as signifying any actual occurrence, so we must exclude the afferent ones considered as actual facts (though both are throughout *implied*, *i. e.*, as existing in some cases): what makes the image cognitive is neither the fact that it has been called forth by the object, nor the fact that it enables us to react to the object; but the fact that, standing at the point in the world where it does, and being what it is, it is the fit instrument for guiding our adjustments to the object—because it is the sign within our minds of what the object is. And, when I add that it really serves as such a sign, that through it our minds are so directed upon the object as never once to think of the sign itself, this is only another way of saying that the image does really bring the object before us.

Let those who are tempted to believe in a psychological self-transcendence make clear to themselves that the image functions in all ways *as if* it were aware: and then ask themselves whether such functioning-as-if does not make their own hypothesis idle.

In the foregoing we have considered projectionism only in its application to sense-perception. I have not room to explain how it would apply to other forms of presentation, such as memory, thought, etc., but must content myself with suggesting that the application could be made.

In conclusion, the reader may be put on his guard against two misconceptions.

1. Though I explain awareness by the practical function of the image, I do not regard it as consisting in that practical function. It has been pointed out that no actual reaction need take place, and that all that is necessary is that the image should be of such a character as to make the right reaction possible. Projectionism does not, then, resolve awareness into action, but only into a peculiar relation between existences which is the condition of action.

2. If any one chooses to say that this relation between existences is not itself awareness, and that the only thing that deserves that name is the logical self-transcendence which is thereby made possible—in a word, the fact of appearance, as such—I have no objection

to this terminology. Only the critic may be reminded that the appearance is *of* the extra-bodily object *to* the intra-bodily subject, and so itself a relation between existences, even if not an existential relation.

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DISCUSSION

MR. MUSCIO'S CRITICISM OF MISS CALKINS'S REPLY TO THE REALIST

I HAVE just read with great interest Mr. Muscio's able and clearly written criticism¹ on my paper, "The Idealist to the Realist."² Muscio's statement, mainly in my own words, of my argument may be summarized as follows: "What is asserted is that the 'idealist *discovers* by examination of objects—he does not (as the realist accuses) *assume*—that both sense qualities and relations are mental.' Hence the question arises: What does Miss Calkins mean by 'mental'? The answer to this question is best seen from the treatment of sensible qualities. . . . The 'idealist' we are told, 'rests his case . . . on the *results* of direct observation coupled with the inability of any observer to make an unchallengeable assertion about sense qualities save in the terms of idealism. To be more explicit: The idealist demands that his opponent describe any immediately perceived sense object in such wise that his description can not be disputed. The realist describes an object as, let us say, yellow, rough, and cold. But somebody may deny the yellowness, the roughness, or the coldness; and this throws the realist back on what he directly observes, what he knows with incontrovertible and undeniable certainty, namely, that *he is at this moment having a complex experience* described by the terms yellowness, coldness, and the like (an experience which he does not give himself). This statement, and only this, nobody can challenge.' "

Mr. Muscio's criticisms are two:

I. It is impossible to "describe" sense qualities for they are elemental, incommunicable (p. 324).

II. Miss Calkins uses the term "mental" ambiguously, meaning by mental sometimes (1) the "incommunicable" (p. 324), sometimes (2) "that which is like me" (p. 325). Now, the sense-quality is in truth (1) incommunicable, but is not on this account "mental."

¹ This JOURNAL, Vol. IX., pages 321-327.

² *Ibid.*, VIII., pages 449-458. In the passage which follows, the sentences in single quotation marks are from this paper.